

PHYSIOLOGY AND THERAPEUTIC USE OF INOSITOLS IN PCOS

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Context: In the last decades, several studies investigated the role of the two main Inositol's stereoisomers, Myo-inositol (MI) and D-chiro-inositol (DCI), in the management of PCOS. Both these sugar-like molecules seem to be very effective in ameliorating hormone and metabolic parameters of these patients, also including an improvement of ovulation rate.

Objective: Clarify the role of Inositol(s), namely MI and DCI, in order to better elucidate their physiological involvement in PCOS and potential therapeutic use in women affected by this condition, as alternative to standard treatments such as metformin.

Methods: Review of the literature on significant experimental studies and RCTs.

Patients: PCOS women.

Interventions: Supplementation with MI and/or DCI.

Main outcome measure(s): Changes in insulin resistance and improvement of both menstrual cycle disorders and metabolic profile.

Results: The ovary of PCOS women shows a MI depletion and a DCI overload. This condition seems responsible for their poor oocyte quality. Both DCI and MI have proven their efficacy in improving PCOS metabolic aspects, namely reducing the HOMA Index. Moreover, studies have shown that the combination of MI and DCI, in a specific ratio of 40:1, represents the best approach for supplementation, in view of the quicker and more effective resolution of signs and symptoms respect with MI or DCI alone.

Conclusions: The available clinical data suggests that MI, DCI and in particular their combination in the physiological ratio 40:1 could be beneficial for improving metabolic, hormonal and reproductive aspects of PCOS. Furthermore, this innovative therapeutic approach could represent a safer alternative to standard treatments such as Metformin.

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